CLAIMS

1. A housing assembly for a rotating cylinder valve engine comprising a rotary cylinder and a crank assembly, the housing assembly comprising a first casing part and a second casing part each formed with a respective jointing face, the first casing part being formed with a tubular bore adapted to receive the rotary cylinder and being formed to partially house the crank assembly and the second casing part being formed to partially house the crank assembly, the housing further comprising a tubular portion for housing bearing means for the crankshaft assembly, the tubular portion being defined by a semi-cylindrical section formed on the first casing part and a semi-cylindrical section formed on the second casing part, the arrangement being such that in the assembled state the respective jointing faces are in contact with each other apart from any gasket therebetween, the plane of the jointing faces being substantially perpendicular to the axis of rotation of the rotary cylinder, the tubular portion locating and retaining the bearing means for the crankshaft assembly.

2. A housing assembly for a rotating cylinder valve engine as claimed in claim 1, wherein the arrangement is such that in the assembled state the axis of rofation of the crankshaft assembly is substantially aligned with the plane of the jointing faces.

3. A housing assembly for a rotating cylinder valve engine as claimed in claim 1 or claim 2, wherein the jointing faces of the respective semi-cylindrical sections are substantially perpendicular to the axis of rotation of the rotary cylinder.

4. A housing assembly for a rotating cylinder valve engine as claimed in claim 3, wherein the arrangement is such that together, the jointing faces of the respective semi-cylindrical sections forming the tubular portion are substantially in the same plane as the axis of rotation of the crankshaft assembly.

5. A housing assembly for a rotating cylinder valve engine as claimed in any one of the preceding claims, wherein in an assembled state the bearing means for the crankshaft assembly is located between a bevelled gear of the crankshaft assembly and a distal end of a crankshaft of the crankshaft assembly.

6. A housing assembly for a rotating cylinder valve engine as claimed in claim 5, wherein the bearing means comprises at least two bearing units.

7. A housing assembly for a rotating cylinder valve engine as claimed in claims 1 to 4, wherein a crankshaft bevel gear is located between one of the bearing units and a distal end of a crankshaft of the crankshaft assembly.

8. A housing assembly for a rotating cylinder valve engine as claimed in claim 7, wherein one of the bearing units is located between a crank web and a crankshaft bevel gear such that said bearing unit is distant from the semi-cylindrical section formed on the first casing part.

9. A housing assembly for a rotating cylinder valve engine as claimed in claim 8, wherein the bearing unit which is distant from the semi-cylindrical section on the first casing part is located and retained by a separate bearing clamping means.

10. A housing assembly for a rotating cylinder valve engine as claimed in any of the preceding claims, wherein in the assembled state the first casing part houses the rotary valve features of the engine.

11. A housing assembly for a rotating cylinder valve engine as claimed in any of the preceding claims 1 to 9, wherein the first casing part of the housing assembly comprises a third casing part connectable to the first casing portion, the third casing portion being adapted to house the rotary valve features of the engine.

12. A housing assembly for a rotating cylinder valve engine as claimed in any of the preceding claims 1 to 9, wherein the first casing part is formed with a flange that comprises the jointing face and the second casing part is formed with a flange that comprises the jointing face, the arrangement being such that in the assembled state the two flanges form means for mounting the engine.

13. A housing assembly for a rotating cylinder valve engine as claimed in claim 12, wherein the two flanges are each formed with corresponding holes that are useable to mount the engine.

14. A method of assembling a rotating cylinder valve engine comprising a housing assembly according to claims 1 to 5, the method comprising introducing a rotating cylinder into the tubular bore of first casing part; then inserting a piston and conrod assembly into the rotating cylinder; then placing the crankshaft assembly in the semi-cylindrical section recess in the first casing part with a crankshaft gear meshed with a rotating cylinder gear at the correct timing point; and then fastening the second casing part to the first casing part to locate and retain the crankshaft bearings.

15. A method of assembling a rotating cylinder valve engine comprising a housing assembly according to claims 1 to 4 and 7, the method comprising introducing the rotating cylinder into the tubular bore of the first casing part; then placing the crankshaft assembly the semi-cylindrical section recess in the second casing part; then fastening an inner bearing cap to the second casing part to locate and retain the inner crank bearing; then holding the crankshaft and rotating cylinder in position to ensure that when the gears mesh the engine will be correctly timed; then inserting the piston and conrod assembly into the rotating cylinder; then fastening the second casing part to the first casing part to locate and retain the remaining outer crankshaft bearings.